

Amendments to and Listing of the Claims:

Please amend the claims to cancel claims 18-46 without prejudice to filing one or more divisional applications and in accordance with the following listing of the claims:

Claim 1 (original) A process for pyrolyzing tire shreds, comprising:

- (a) feeding tire shreds to a pyrolysis reactor;
- (b) pyrolyzing the tire shreds in a pyrolysis reactor to produce a gas stream comprising hydrocarbon and a solid comprising carbon;
- (c) removing the solid comprising carbon from the pyrolysis reactor;
- (d) directing the gas stream comprising hydrocarbon into a separator;
- (e) contacting the gas stream comprising hydrocarbon with an oil spray in the separator thereby washing particulate from the gas stream and condensing a portion of the gas stream to oil;
- (f) removing and cooling the oil from the separator;
- (g) directing non-condensed gas from the gas stream comprising hydrocarbon away from the separator; and
- (h) directing a portion of the cooled oil removed from the separator to an inlet of the separator for use as the oil spray in the separator

Claim 2 (original) The process according to claim 1, further comprising directing the solid comprising carbon removed from the pyrolysis reactor to an auger having an inlet and an outlet and a pressure in the auger which is greater than a pressure in the pyrolysis reactor.

Claim 3 (original) The process according to claim 2, wherein the pressure within the auger is greater than atmospheric pressure.

Claim 4 (original) The process according to claim 2, further comprising:

- (i) directing a portion of the non-condensed gas from the gas stream after step (g) to at least one burner in heat exchange relation with the pyrolysis reactor;
- (ii) burning the non-condensed gas from the gas stream in the at least one burner to heat the pyrolysis reactor and thereby generating an effluent flue gas;
- (iii) extracting a portion of the effluent flue gas;
- (iv) cooling the extracted portion of the effluent flue gas; and

(v) injecting the cooled portion of the effluent flue gas into the auger.

Claim 5 (original) The process according to claim 2, further comprising maintaining the auger substantially anaerobic.

Claim 6 (original) The process according to claim 2, further comprising directing the solid comprising carbon from the outlet of the auger to a carbon black separation system to separate carbon black from the solid comprising carbon.

Claim 7 (original) The process according to claim 6, further comprising maintaining a pressure in the carbon black separation system lower than the pressure in the auger and higher than the pressure in the pyrolysis reactor.

Claim 8 (original) The process according to claim 7, further comprising maintaining the pressure in the auger at greater than atmospheric pressure and maintaining the pressure in the pyrolysis reactor at less than atmospheric pressure.

Claim 9 (original) The process according to claim 1, wherein the non-condensed gas from the separator is directed to a condenser and gas leaving the condenser is directed to a flare.

Claim 10 (original) The process according to claim 1, wherein step (f) further comprises passing the oil removed from the separator through a sludge processing system to remove sludge comprising solids and heavy oils and pulverize the solids in the sludge.

Claim 11 (original) The process according to claim 1, wherein step (d) further comprises directing the gas stream comprising hydrocarbon through an expansion tank in communication with the separator before directing the gas stream comprising hydrocarbon into the separator and preventing accumulation of solids in the expansion tank.

Claim 12 (original) The process according to claim 11, further comprising preventing accumulation of solids in the expansion tank using at least one paddle.

Claim 13 (original) A process for pyrolyzing tire shreds, comprising:

- (a) feeding tire shreds to a pyrolysis reactor;
- (b) pyrolyzing the tire shreds in a pyrolysis reactor to produce a gas stream comprising hydrocarbon and a solid comprising carbon;
- (c) removing the solid comprising carbon from the pyrolysis reactor;
- (d) directing the gas stream comprising hydrocarbon from the pyrolysis reactor to a separator for condensing a portion of the gas stream comprising hydrocarbon;

(e) directing the solid comprising carbon removed from the pyrolysis reactor into an auger having a pressure in the auger which is greater than a pressure in the pyrolysis reactor;

(f) directing a portion of non-condensed gas from the gas stream after step (d) to at least one burner in heat exchange relation with the pyrolysis reactor;

(g) burning the non-condensed gas from the gas stream in the at least one burner to heat the pyrolysis reactor and thereby generating an effluent flue gas;

(h) extracting a portion of the effluent flue gas;

(i) cooling the extracted portion of the effluent flue gas; and

(j) injecting the cooled portion of the effluent flue gas into the auger.

Claim 14 (original) The process according to claim 13, further comprising

(i) contacting the gas stream comprising hydrocarbon with an oil spray in the separator thereby washing particulate from the gas stream and condensing a portion of the gas stream to oil;

(ii) removing and cooling the oil from the separator; and

(iii) directing a portion of the cooled oil removed from the separator to an inlet of the separator for use as the oil spray in the separator.

Claim 15 (original) The process according to claim 13, further comprising maintaining the auger substantially anaerobic.

Claim 16 (original) The process according to claim 13, further comprising directing the solid comprising carbon from the outlet of the auger to a carbon black separation system for separating carbon black from the solid comprising carbon.

Claim 17 (original) The process according to claim 16, further comprising maintaining a pressure in the carbon black separation system lower than the pressure in the auger and higher than the pressure in the pyrolysis reactor.

Claim 18 (original) The process according to claim 13, further comprising maintaining the pressure in the auger at greater than atmospheric pressure and maintaining the pressure in the pyrolysis reactor at less than atmospheric pressure.

Claims 19-46 (canceled).